

NC State University Design and Construction Guidelines

Division 02 Waste Materials Management – Reuse, Recycling, & Hazardous Waste

1.1 Purpose

- A. The following guidelines define waste management and disposal responsibilities for both hazardous and non-hazardous construction and demolition (C&D) wastes. The guidelines also address performance and reporting requirements.

2.0 General Requirements

A. Definitions

1. Construction & Demolition Waste: Building and site improvement materials, and other solid waste resulting from construction, demolition, renovation, or repair operations. Material stream also includes brick, concrete, asphalt, and aggregate.
2. Special Waste: Solid wastes that require special handling and management.
3. Hazardous Waste: Any solid waste that is ignitable, corrosive, reactive, or toxic; a listed hazardous material or containing a listed hazardous material per Title 40 Code of Federal Regulations Parts 260-270.
4. Universal Waste: Hazardous wastes that have been provided specific exemptions (40 CFR 273) to encourage recycling. Universal wastes are limited to recalled or cancelled pesticides and intact batteries, lamps, and mercury containing devices. State regulations prohibit the crushing of fluorescent lamps.
5. Salvage: Recovery of waste for reuse in the existing facility, a different facility, subsequent sale as State Surplus property, or other reuse efforts.
6. Recycle: Recovery of waste for processing and preparation into products or raw materials.
7. Yard waste: A solid waste consisting solely of vegetative matter resulting from landscaping maintenance.

B. Performance Goals and Requirements

1. All hazardous and non-hazardous generated waste shall be managed in accordance with local, state, and federal regulations.
2. Seventy-five percent (75%) of a project's non-hazardous waste must be diverted from landfill disposal through reuse and recycling.
3. One hundred percent (100%) of yard waste must be diverted from landfill disposal through reuse and recycling.
4. The Designer must complete the Designer Waste Information Form (<http://go.ncsu.edu/wasteinfoform>) and identify regulated wastes, as well as materials, fixtures, and equipment that are to be salvaged for reuse or recycled. The location of the staging area as well as the responsible party for removal, delivery, and/or pick up must also be included.
5. The completed **Designer Waste Information Form must be included in the Construction Documents** that go out for review and bid.
6. The Contractor must provide a Waste Management Plan (<http://go.ncsu.edu/wastemanagementplan>) to NC State for approval prior to implementing work. The plan shall include details on how the hazardous and non-hazardous generated waste will be managed in accordance with local, state, and federal regulations. Contractor must also provide all

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materials, personnel, and protective equipment necessary to remove and store wastes in accordance with the plan. The Contractor must coordinate salvage or reuse efforts identified on the Designer Waste Information Form with NC State and/or the non-profit entity.

C. Reporting Requirements

1. Hazardous Waste

a) The Contractor must provide NC State with a copy of all hazardous, universal, and special waste disposal certifications and/or manifests for all waste shipped.

2. Non-Hazardous C&D Waste

a) All reuse, recycling, and landfilled materials are to be tracked and complied on NC State's tracking forms, which can be found at <https://recycling.ncsu.edu/wp-content/uploads/sites/3/2018/04/CD-Tracking-forms-for-upload.pdf>. The completed form, with weight tickets/invoices attached, is considered a required close-out document and must be submitted before final payment is issued.

3.0 Management of Hazardous, Universal, and Special Wastes

A. Hazardous, universal, and special wastes must be managed separately from other C&D wastes.

B. Disposal must be coordinated with NC State Environmental Health & Safety.

C. Special wastes include:

1. Paints, varnish, solvents, sealers, thinners, resins, roofing cement, adhesives, lubricants, and caulk, or drums and containers that once held these materials.
2. Treated wood including lumber, posts, ties, decks, and utility poles (creosote, arsenic, chromium, pentachlorophenol).
3. Asbestos, PCBs, mercury, or lead containing materials
4. Used oil
5. Lead acid batteries
6. Medical wastes

D. Waste disposal responsibility falls to one of two parties: the Contractor or NC State, as defined in the NC State Environmental Health and Safety's document:

Management of Building Demolition Debris available at: <http://go.ncsu.edu/demodebris>

1. Containers used for waste storage must be United States Department of Transportation approved. The Contractor must supply bins, tanks or tank trucks. Containers must remain closed at all times except when material is being added. NC State will provide containers for items collected by NC State.
2. Hazardous waste containers must have labels that clearly identify waste streams. Different waste streams cannot be combined in a shared container. The Contractor must identify the initial accumulation date on

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- the hazardous waste label when waste is first placed in the container.
3. Waste containers must be stored in a secured, covered, and well identified area of the construction site. Hazardous waste cannot be stored for more than 90 days. Any waste stored for more than six days must be inspected, and the inspection documented, weekly.
 4. Spill response supplies must be on-site and adequate to contain 110% of any accumulated waste. Portable fire extinguishers must also be readily available. If a spill occurs, Contractor must contact NC State immediately and proceed with spill containment and clean up.
 5. The Contractor must provide NC State with a copy of all hazardous, universal, and special waste disposal certifications and/or manifests for all waste shipped.

4.0 Management of Non-Hazardous Waste

A. Priority 1 - Salvage of Construction and Demolition Waste for Reuse

1. Salvaged materials should first be evaluated for use in University construction projects. NC State Surplus Property Services should be considered if there are reusable materials that have resale value and are no longer needed by the University. Contact Waste Reduction and Recycling (ajbensle@ncsu.edu) for assistance with disposition.

Examples of Salvageable material include:

- a) Furniture and electronics
 - b) Cabinets and shelves that are not built-in
 - c) Sinks and water fountains
 - d) Paper towel dispensers
 - e) Newer light fixtures
 - f) Dry erase boards, chalkboards, and cork boards
 - g) Solid wood panel doors
 - h) Brick pavers
2. Contact vendors about take-back programs to recycle materials their company provides. These materials include, but are not limited to ceiling tiles, carpet tiles, and cubicle walls.
 3. Coordinate with the Project Manager to utilize the [NC State Construction Shop](#) for the careful removal of salvageable items prior to contractor demolition. An estimate for the Construction Shop's work must be received during design and must be initiated prior to the project going out to bid.

B. Priority 2 - Recycling of Construction and Demolition Waste

1. If materials are not a salvageable for reuse, they must be source separated to the greatest extent possible and recycled.
2. Common source separated materials for recycling include:
 - a) Cardboard
 - b) Bottles and cans
 - c) Scrap metal and wire

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- d) Rigid plastics
- e) Untreated/unpainted dimensional lumber
- f) Gypsum board (unpainted)
- g) Concrete
- h) Asphalt (pavement and shingles)
- i) Aggregate
- j) Brick and CMU

3. 100% of the following materials must be recycled:

- a) Cardboard
- b) Bottles and cans
- c) Scrap metal and wire
- d) Concrete
- e) Asphalt (pavement and shingles)
- f) Aggregate
- g) Brick and CMU

h) Designer shall coordinate with Waste Reduction and Recycling office during design to properly coordinate selective demolition requirements and recycling goals.

C. Priority 3 - Disposal of Construction and Demolition Waste

- 1. If material/s cannot be salvaged for reuse or source separated and recycled, they must be sent to a C&D recycling and reclamation facility. Materials are not to be sent directly to a landfill or a facility that does not sort and recycle.

D. All solid waste management facilities must be permitted to operate by NCDEQ in accordance with [15A NCAC 13B .0201](#).

E. University Contract Pricing

- 1. When available, the contractor may utilize University contract pricing for related facility tip costs or recycling rebates. In order to utilize contracts, contractor must coordinate with the University project manager and Waste Reduction and Recycling office.

F. University Rolloff Services

- 1. Depending upon the scale of the work, dumpster services can be provided for Informal or Formal construction projects. Coordinate with NCSU Waste Reduction and Recycling to provide 17-20 cubic yard rolloffs. Rental and contact information; <https://recycling.ncsu.edu/rentals/>